Rio Grande – Big Bend Partners Meeting
May 12, 2009

Barton Warnock Environmental Education Center
Terlingua, TX

Welcome and Introductions

- Welcome from Tony Gallego, Superintendant of Barton Warnock Education Center
- Meeting is open forum, feel free to ask questions.
- Introductions conducted
- All presentations and minutes will be posted to a National Weather Service website. Details on location will be sent via email after the meeting.

September, 2009 Rio Grande/Rio Conchos Flood Event – Lessons Learned

Flood Summary – International Boundary & Water Commission (IBWC) - Gabe Duran

- IBWC set up emergency center (EOC) in Presidio during flood event.
- Crews throughout the commission were sent to Presidio to assist in flood/levee operations.
- Numerous problems with levees (side slope failure, piping and seepage)
- Helicopters supplied from the state dropped “super sandbags” along railroad trestle to stop water from inundating Presidio. Old railroad was used as a backup levee system to protect Presidio.
- Picture shown of levee failure along Alamosa Creek.
- Presidio levees were built by IBWC. Levees were designed for 25 year flood event. Levees performed well considering the amount of water and the duration of the water.
- State provided people (detainees) to assist in sandbag efforts.
- IBWC laid 30,000-40,000 sandbags along a 2 mile stretch of levee. To compensate, laid two miles of plastic to line the levees. Took approximately three days to lay plastic.
- Current reservoir status:
- La Boquilla = 83% of conservation capacity (May 6, 2009)

- Luis Leon is 156% of conservation capacity (May 6, 2009)
- Currently working with Conagua to set up flood workshops for the Rio Conchos and Presidio areas.
- IBWC is working on a document on best practices/lessons learned from Presidio flooding.
- IBWC Commissioner passed away while touring flooding by air.

Flood Support / Post Flood Analysis – U.S. Geological Survey (USGS) – Cary Carman

- USGS San Angelo, San Antonio, and Austin spent ~ 3 weeks in the region to assist in performing river measurements.
- Rio Grande River near Castolon
    - Water came to within 6 inches of the top of the gage house. Equipment was moved as late as possible.
    - Large amount of bank was lost during the flood event. This also occurred at Foster Ranch.
    - Gage was relocated to nearby boat ramp.
    - Temporary gage worked well through the event.
    - River was very wide and difficult to find the main channel during the height of the event.
    - Rating was for low flow only before event. Continually updated the rating curve after each measurement. Will be updating rating curve again after post flood analysis.
    - Shifts of approximately 1.5 feet are occurring at both gage locations.
    - Significant scour occurred with event.
    - Sediment is starting to fill the channel again.
- Rio Grande River near Rio Grande Village (Boquillas)
    - Old gage location was inundated with water and eventually swept away.
    - New gage was moved higher after the event.
    - Water was to the top of the pump house.
    - Significant loss of bank.
    - Loss of all equipment: staff gages and USGS equipment.

- Video shown of flood taken during USGS measurements.

- USGS replaced all lost gages, funding of replacement was paid from a USGS flood event account.

- NPS assisted USGS to get measurement equipment to the river. (Used front end loaders to get boats to the river.)

- USGS will be making measurements on rise and crest with the new reservoir releases out of Mexico.

- At this time, there is no flood event report prepared by USGS. Some information will be included in the Water Resource Annual Report.

- Data from flood event is still being quality controlled and was not supplied in the last Water Resource Annual Report. Will be included next year.

- All of the rating curves (both IBWC and USGS) are being completely redone due to the significant changes to the channel characteristics.

- Releases from Mexican reservoirs will begin on May 15 and should arrive on the Rio Grande Tuesday next week and continue for approximately 25 days. Start at 50 cms, then increase to 80 cms. Releases could be increased to 120 cms. IBWC wants to try to keep the water within the main river channel.

- At the request of NPS and USGS, IBWC will discuss with CILA and Conagua the possibility of tapering off the reservoir releases gradually to assist in preventing significant bank changes.

- A recommendation was made to have IBWC coordinate a meeting with area entities and CILA to discuss releases from Mexican reservoirs. Possible dates for meeting: week of June 1, 2009 in El Paso. Jeff Bennett will be point of contact from NPS.

- IBWC communication with CILA was good and quick during event.

- NPS suggested the USGS provide training and equipment to assist USGS in making measurements in the event that USGS cannot make the trip to the Rio Grande.

Presidio Impacts, Lessons Learned - (Presidio, TxDOT, Border Patrol)

Patrick Repman – Incident Management Team

- All-Hazards Incident Management Team

- Member of Permian Basin Incident Management Team.

- Provided briefing on All-Hazards Incident Management Teams (IMT). The purpose and organization of the IMT.

- IMT provides command and general staff positions for incident command and assists in the documentation of the event.

- Set up the EOC for Presidio during flood event. Incident Commander was used from Texas Forest Service.
- Provided quick response to Presidio (deployed within ½ day after contacted by state).
- Flood event served as a big learning experience for the team.
- No two events are the same but they provide opportunities to learn.
- Lessons Learned:
    1. Bring partners to the table before the event.
    2. Find a local counterpart to create an atmosphere of genuine concern of the local issues.
    3. Be flexible.

Chris Webber – Tx Department of Transportation – Alpine, TX

- 43 TX DOT employees assisted with the event
- Responsible for loading and hauling of materials for sand bags.
- Multiple locations (~30) of FM 170 inundated by flood waters.
- Road was built to be able to access the area around the railroad bridge so that sandbagging operations could be conducted.
- 15-20 super sandbags filled per hour before inmates arrived. (Inefficient system)
- 150 inmates deployed to assist with sand bagging efforts. Two teams of 75 people were formed (1 team rested while the other team worked on bags)
- Approximately 550 super sand bags were filled during the event. Over 400 used to create levee along railroad bridge.
- TxDOT was using NWS forecast at International Bridge to help determine how high to build temporary berms and levees.
- Massive amounts of dirt and boulders along FM 170 after water receded.
- Several sections of pavement lost on FM 170.
- Checked stability of International Bridge before opened up to public again.
- Over 1 million dollars TX DOT has invested during and recovering from the event.
- Lessons Learned:
    1. Communication was effective even with language barriers.

2. Organized chaos.
3. Learned about Incident Command during the event.
4. Cannot document enough during the event.
5. Plan for extra (supplies, personnel), better to have too much since the duration of the event is unknown.
6. Don't hesitate to ask for resources during the event.
7. Food and water were some of the most important resources to fuel the workers.

- USGS notified TX DOT that they can assist with bridge inspection with USGS equipment in the future.
- Contact TX DOT if interested in pictures and video.

Impacts and Lessons Learned – Big Bend National Park, National Park Service (NPS)National Park Service – Raymond Skiles

- Ran an incident command center for the park during the event.
- Though the park has few developments, many are located in the floodplain.
- Priorities during the flood: life and safety of both park personnel and visitors / recreationists in park.
- Needed to evacuate some people and turn power off to prevent problems.
- NPS was excited to see the flood to restore the river to an ecosystem that is similar to a historical ecosystem.
- Castolon – road became flooded. NWS gaging was inaccessible and observations could not be made. Relied on automated readings. Even the automated gages needed to be moved due to the high water.
- Levees made around historic buildings to preserve.
- Rio Grande Village – NPS did not know how to interpret the NWS river stage forecast. Was unsure how to tie the forecast into elevations in and around the gage. Unsure of the impacts on the population/buildings based on the river forecast.
- Rented moving trucks from Study Butte to move residents out of Rio Grande Village.
- Staff busy keeping up with visitor inquires.
- Park has been spending considerable resources to remove dirt that was deposited during the flood.
- Flood water almost inundated into the Rio Grande water supply.

- TCEQ funds the gage at Rio Grande Village which was vital to the NWS river flood forecast efforts.

- Delivered food and supplies collected by the NPS food drive to Mexican neighbors who were isolated Delivers were made via the USGS boat.

- About 600 endangered fish were captured and moved to ensure that flood waters did not inundate the fish ponds and kill the fish.

- Lessons Learned:

    1. Take advantage of the expertise of other entities to better understand the river channel and flood level impacts.

    2. Many benefits from the flood. (I.e., returning the river to natural characteristics)

- NPS would like to educate others on river morphology and impacts due to the changes to the river channels.

- Work closer with reservoir operators to ensure water deliveries help preserve the river channel.

- May have been beneficial to have NPS call into the daily Presidio EOC briefings.

Recreation: Impacts from Flood Event and Establish Working Group to Improve Recreation Advisory/Forecast – Frank Bell

- Inundation Mapping is a new initiative of the NWS. To produce these static inundation maps, high resolution DEM (10 m) and hydraulic models are needed to produce these maps.

- River Recreation Forecasts

- Issued by WGRFC in Fort Worth, Texas

- Three types of forecasts: 1) Flood Only, 2) Daily, and 3) Recreation Forecast

- Two locations on the Rio Grande – Presidio and Boquillas

- Forecast is created weekly on Wednesday and is valid for the weekend.

- Reservoir Releases are considered in the forecasts and are coordinated between WGRFC and the reservoir operators.

- Floatability levels need some revision; WGRFC is looking for assistance from the Texas Park and Wildlife and the Big Bend river outfitters in redefining the floatability levels.

- Public confusion on where to obtain river flow data. Three entities (IBWC, NWS, and USGS) provide data at these sites. Often times, NWS flow forecasts are not

matching the flow being observed in the area. This relates to which stage/flow relationship is used by the different agencies.

- May need to establish some additional forecast points (if data available) to help better define floating levels at various locations along the river.

- Feedback from outfitters to alert the NWS to flow levels may be helpful to NWS. May be able to find a way to relay this information into the Recreation product.

- NWS is proposing the formation of a team to discuss how to make changes to the Recreation Forecast.

- Jason Johnson (NWS San Angelo) will be the point of contact to form River Recreation Forecast Team.

Event Summary – NWS Perspective

Service and Coordination Improvements – Christopher Daniels and Jason Johnson

- Last fall, all three major reservoirs on the Rio Conchos were near or above conservation levels.

- Monsoon pattern sets up during early summer and provide opportunities for rainfall throughout the summer.

- Three tropical systems impacted various portions of the Rio Grande last summer.

- New flood of record at Presidio (International Bridge) on 9/16/08.

- During flood event, prepared email summaries of flood forecasts and warnings and distributed to partners. The NWS will continue to issue these summaries in future flood events.

- Civil Air Patrol took NWS personnel on aerial tour of flooding for documentation purposes.

- First event where there was automated gage readings at Castolon and Rio Grande Village and proved very valuable.

- Flood warnings started 9/2/08. Last flood warning was issued on 10/19/08.

- Request for gauging station at Lajitas. USGS indicated that Lajitas is listed on the NSIP list. However, there is concern that if NSIP funding is used it will only be funded for 1 or 2 years.

- NWS has replaced a lower section of staff gage at Lajitas. NWS and USGS are coordinating staff gage replacement at Castolon and Rio Grande Village.

- Action: Check with Border Patrol on feasibility of funding for Lajitas gauging station.

- NWS is looking at trying to use UT Austin Landsat Data.
- NWS looking to improve services by coordination meetings to gather feedback.
- NWS is working on documenting and updating flood impacts and records.
- Current Mexican Reservoirs levels are starting at similar levels as last spring. Luis Leon is significantly higher than last spring.
- Climate Prediction Center (CPC) is forecasting for above normal precipitation in far west Texas along the Rio Grande River through the Big Bend. This could lead to an active monsoon season with above normal precipitation.
- IBWC will be modifying the levees to protect to the 100 year flood levels. No plans to rectify the levees in the Redford area.

Decision Support – Pat Vesper

- NWS culture is changing and recognizing the need to establish strong partnerships with users instead of just issuing products.
- NWS is increasing support by onsite support and through briefings (tactical and strategic).
- NWSChat will be used more frequently to communicate with partners.
- NWSChat is special chat software that is being supported by the NWS.
- Currently NWSChat is used by over 100 NWS offices.
- Provides an opportunity for all partners to “get on the same page” and exchange information.
- All NWS products are displayed on this software when the product is issued.
- RFCs are also utilizing NWSChat.
- To sign up for NWSChat: https://nwschat.weather.gov
- Using Pidgin software to run NWSChat.
- Changes to NWS Websites:
- Still providing same information just in a different format.
- Showing threat areas graphically on the main page.
- AHPS webpage has been renamed to Rivers/Lakes and is available on the left column

- Lora Mueller presentation on Fall 2008 Rio Grande Flood Event is available under the Hydrology webpage that is accessed off of the left column.

High Water Mark Signs – Ben Weiger

- New hydrologic outreach project to highlight significant flood events.
- Goals of the project are to commerate historical floods and raise awareness of local flood risks.
- Local NWS Weather Forecast Office will work with local entities to find locations for these signs. Surveying is needed to properly place the high water mark sign.
- A high water mark sign will be posted along the Rio Grande in Laredo.
- Project is expanding nationwide.

Continuous Water Monitoring on the Upper Rio Grande - TCEQ – Christine Kolbe

- Water Quality is crucial to many activities on the Rio Grande.
- 14 water quality sites currently on the Rio Grande, 18 locations by mid-summer.
- Two sites on Pecos River (upstream of I-10) to monitor effects of salt cedar eradication.
- Two sites on Pecos River (downstream of I-10) and 1 on Devils River to monitor changing water quality.
- Water quality is monitored by Texas Water Master to know when to make releases from Falcon to ensure better water quality.
- TCEQ breaks the Rio Grande into two segments 1) El Paso to upstream of confluence with Rio Conchos and 2) Rio Conchos confluence to Amistad Reservoir.
- The water quality is impaired (failing) in segment 1. The water quality is adequate in segment 2 due to spring inflow, however the water quality is approaching the impaired level.
- To access water quality data: http://www.texaswaterdata.org and on http://tx.usgs.gov
- Flow sites cost $32,000 for installation of gage. Operations and maintenance cost $18,000 per year for each gage.
- Currently funded through 8/31/2010. Need to identify funding sources for beyond 2010.
- TCEQ should coordinate with Fish and Wildlife.

Transboundary Risk Identification and Mitigation Program (TRIM) - Tyrus Fain and Bill Skeen (Rio Grande Institute)

- At the end of last year, U.S. and Mexico signed an agreement to improve coordination between the countries.
- TRIMs project implements hazard mitigation for the Rio Grande.
- Goals are to train local jurisdictions on many hazard related items.
- Vision is to strengthen bi-national commitments, diminish risks, and provide training.
- Created an electronic directory of Emergency Management officials in both countries. Directory will be updated periodically.
- Funding for this project is coming through National Guard to Texas A&M. Original funding was provided by hazard mitigation funding. All funding is coming from U.S.
- There may be money available in the project to assist in funding stream gage sites to help facilitate hazard mitigation.

Open Discussion / Discuss Future of Meetings

- TX DOT has extensive terrain information and is willing to share to create impact information and assist with hydrologic modeling.
- A suggestion was made to form a multi-agency team to plan and coordinate these annual meetings. This would ensure all interested parties are participating in the meeting.
- An email will be sent with the attendee information, minutes, and information on where to access the presentations given during the meeting.
- Pat Vesper will supply email containing information on how to join NWSChat.

Adjourn